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10/773,325	02/09/2004	Jung Ug Han	MRE-0067	6642
34610	7590	02/06/2007		
FLESHNER & KIM, LLP P.O. BOX 221200 CHANTILLY, VA 20153			EXAMINER CHIN, PAUL T	
			ART UNIT 3652	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		02/06/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/773,325

Applicant(s)

HAN ET AL.

Examiner

PAUL T. CHIN

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 June 2006 and 11 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 and 15-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 15-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. Applicant's amendments filed June 1, 2006, and September 11, 2006, and the arguments presented therewith have been carefully considered and are persuasive. Therefore, the rejection has been withdrawn. However, the arguments are moot in view of a new ground of rejection. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**.

#### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
3. Claims 1-13, 15-21, and 24-26 are rejected under 35 U.S.C. 112; second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicant recites, "a correcting means installed on the main frame for correcting a tilt angle of a fixed tray supported by the fixing means" in claim 1, lines 5-6, claim 17, lines 2-3, and claim 24, lines 1-2. The provided Figure 3 shows a base frame (110) and a correcting means (140) installed on a central axis of the frame. The provided spring (143) would bias against the gripped tray in combination with the L-shaped grippers. However, it is not clearly understood as to how "the fixed tray" has a tilt angle and how "the correcting means" would correct the tilted fixed tray. Note that the biased spring (143) would not correct the tilted tray because they are located in the central axis of the main frame (110). Moreover, claim 7 recites that the correcting means is installed in a center of the main frame and the recitation is not clearly understood. Figure 3 clearly shows that two of the correcting means (140, 140) are not installed in a center of the main frame (110). Instead, they are installed at a center line of the main frame.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1,2,7,9,10, and 20-24, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Itoh et al. (6,406,246) (see PTO-892).

With respect to claims 1 and 22, Itoh et al. (6,406,246) discloses a tray transferring apparatus comprising a main frame (235), a fixing means (239,242) installed on the main frame (235), four guiding pins, which can be considered as a correcting means, for correcting the tray, a hook (240), which can be considered as a gripping means, for gripping a handling tray, and at least one sensor (243), a proximity sensor (Col. 5, lines 43-51) for sensing for sensing. Note that applicant recites the intended use of "supporting a fixed tray" and "for support a handling tray" and fails to clearly distinguish the two trays. Itoh et al. (6,406,246) is capable of supporting at least two stacked trays, a fixed tray, and a handling tray, by the gripping means.

Re claim 2, figure 3 shows a first link (242) (see Fig. 3), which can be considered as a first fixing unit, installed in one side of the main frame (235), and a second link (242), which can be considered as a second fixing unit, installed the other side of the main frame (235).

Re claim 7, figure 3 shows a cylinder (241), which can be considered as a correcting means, installed at the center of the main frame (235).

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Re claims 9 and 10, Itoh et al. (6,406,246) further shows a cylinder assembly, which is a driving unit, for driving a gripping unit (240,240), and a hole on the main frame (235), which can be considered as a guide unit. The gripping unit comprises a plurality of grippers (240,240) disposed on opposite side of the main frame (235), and the linkages (242), which can be considered as gripper plates, disposed on opposite side of the main frame (235).

6. Claims 22-26, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Soraoke (4,453,757).

Soraoke (4,453,757) shows a transferring apparatus comprising a main frame (2), one of the grippers or fixers (15,15), which can be considered as a fixing means, installed on the main frame (2), and a gripper, at least one of the grippers (15,15), to hold another object. Note that Soraoke's device (4,453,757) is capable of supporting at least two stacked objects, by the gripping means and the fixing means.

Re claims 24-26, figures 4-6, as broadly as recited, show biasing means, a spring (16), to correct the tilt angle of the gripped object.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 11, as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Itoh et al. (6,406,246).

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Itoh et al. (6,406,246), as presented in section 5 above, shows a ball screw (231) to moving the main frame (234,235) and a gripping unit driven by cylinders (241), but does not show a cylinder to drive the ball screw. However, it would have been obvious to those skilled in the machinery industries to provide a cylinder or a motor to drive the screw to move the gripping unit.

9. Claims 3-6,8,12,17-19,25, and 26, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Itoh et al. (6,406,246) in view of Okugi (6,379,103).

With respect to claims 3-6 and 8, Itoh et al. (6,406,246), as presented above, shows a pin where each hook (240) (Fig. 3) is being attached, but does not show the detailed structure of the gripping jaw comprising a first fixing member having a pin, a tension spring, and the fixing member having a slot and a slide member to slide into the slot and a second fixing member having a L-shape and a fastening member to install to the main frame. However, Okugi (6,379,103) teaches a fixing member (60) having a screw for installing the fixing member to the main frame, and a tension spring (Fig. 1a) to bias the fixing means. Accordingly, it would have been obvious to those skilled in the art to provide a L-shape gripper on the linkage of Itoh et al. (6,406,246) to replace the gripping hook (240) as taught by Okugi (6,379,103) to firmly grip the underneath tray. Note that Okugi (6,379,103) shows a guiding hole (60c) (fig. 1A) for the screw and it would have been obvious to provide a slot, instead of a circular hole, on the fixing member (60) of the Okugi (6,379,103) to conveniently guide the fixing member.

Re claim 11, Itoh et al. (6,406,246) does not show a rod passing through the gripping unit. However, Okugi (6,379,103) teaches a bolt, which can be considered as a rod, to pass through the gripping jaw. Accordingly, it would have been obvious to those skilled

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in the art to provide a L-shape gripper on the linkage of Itoh et al. (6,406,246) to replace the gripping hook (240) as taught by Okugi (6,379,103) to firmly grip the underneath tray. Re claims 17-19,25, and 26, Itoh et al. (6,406,246) shows guiding pins (239,239), which can be considered as a correcting means, mounted on first and second ends of the main frame (235) to press against the fixed tray. Itoh et al. (6,406,246) does not show first and second elastic members to press against the tray. However, Okugi (6,379,103) teaches a biased means (60d) (Fig. 1A) to press against a frame. Accordingly, it would have been obvious to those skilled in the art to provide a biased means (instead of guiding pins) on the main frame of Itoh et al. (6,406,246) as taught by Okugi (6,379,103) to resiliently bias against the gripped object. Moreover, it also would have been obvious to those skilled in the art to provide a spring each pin (instead of a fixed guide pin) on the Itoh et al. (6,406,246) to provide a resilient guide pin to prevent the damaging of the gripped object.

10. Claims 13,15, and 16 rejected under 35 U.S.C. 103(a) as being unpatentable over Itoh et al. (6,406,246) in view of Kobayashi et al. (6,354,792).

Itoh et al. (6,406,246), as presented above, do not show an optical sensor. However, Kobayashi et al. (6,354,792) teaches an optical sensor, having a light emitting device and a light receiving device, to detect the tray cassette position (Col. 9, lines 27-48). Accordingly, it would have been obvious to those skilled in the art to provide an optical sensor or sensors on the gripping plates (234,235) of Itoh et al. (6,406,246) as taught by Kobayashi et al. (6,354,792) to precisely detect the position of the tray or the movement of other devices. Note that it would have been obvious to those skilled in the art to

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locate sensors on the main frame or the fingers of Itoh et al. (6,406,246) for detecting the movement of a gripped object or a movement of a gripping member.

11. Claims 1-7,9,10,12,13,15,16,20, and 21, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Soraoke (4,453,757) in view of Kobayashi et al. (6,354,792).

With respect to claims 1,7,13,15 and 16, Soraoke (4,453,757) shows a transferring apparatus comprising a main frame (2), one of the fixers (15,15), which can be considered as a fixing means, installed on the main frame (2), and a gripper, at least one of the grippers (15,15), which can be considered as a gripping unit, installed on the main frame (2) to hold another object, and a plate (17), which can be considered as a correcting means for alignment. Note that Soraoke's device (4,453,757) is capable of supporting at least two stacked objects, by the gripping means and the fixing means. Soraoke (4,453,757), as presented above, do not show an optical sensor. However, Kobayashi et al. (6,354,792) teaches a sensor, or an optical sensor, having a light emitting device and a light receiving device, to detect the position of an object (Col. 9, lines 27-48). Accordingly, it would have been obvious to those skilled in the art to provide an optical sensor or sensors on the grippers of Soraoke (4,453,757) as taught by Kobayashi et al. (6,354,792) to precisely detect the misalignment of the object.

Re claims 3-6 and 10, figures 4-6 of s Soraoke (4,453,757) show a first fixing unit having a pin (14), a spring (16), a fixing member being coupled to the second end of the spring and having a hooking jaw (15b). Note that figure 1 shows slots (19,20) to provide a sliding (gripping and releasing) position of the grippers (15,15) and a member (22), which



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can be considered as a slide member, installed in the slot to guide movement of the fixing member. A second fixing member (15) is similar to the first fixing member.

Re claim 9, figures 2 and 3 of Soraoke (4,453,757) show a driving means.

Re claim 10, figure 6 of Soraoke (4,453,757) shows a plurality of plates (26), and a plurality of grippers (15b,15b) being attached to the plates.

Re claims 7 and 17, figure 4 of Soraoke (4,453,757), as broadly as recited, shows a correcting means (17) installed in a center of the main frame.

Re claim 12, figures 4-6 of Soraoke (4,453,757) show a rod (14) passes through the gripping unit.

12. Claims 8 and 17-19, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Soraoke (4,453,757) and Kobayashi et al. (6,354,792), as applied to claim 1, and further in view of Sumnitch (5,762,391).

The modified Soraoke (4,453,757), as presented above, shows a plate (17) to level the gripped object, but does not show a biased spacer to correct the angularity of the gripped object. However, Sumnitch (5,762,391) teaches a spring biased pins (10,10) (Col. 4, lines 21-38) to provide a soft touch to the gripped object. Accordingly, it would have been obvious to those skilled in the art to provide at least two biased pins at the bottom plate (17) of Soraoke (4,453,757) as taught by Sumnitch (5,762,391) to prevent from damaging the top surface of the gripped object.

#### ***Response to Arguments***

13. Applicant's arguments with respect to claims 1-13 and 15-26 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

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14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

15. Applicant's amendment (the addition of new structural limitations in the claims) necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAUL T. CHIN whose telephone number is (571) 272-6922. The examiner can normally be reached on MON-THURS (7:30 -6:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Mackey can be reached on (571) 272-6916. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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